



## Medical School Hotline

### USMLE Performance of Medical Students at the John A. Burns School of Medicine

by **Gwen S. Naguwa, MD, Associate Dean,  
Office of Student Affairs**

Recent performance of medical students at the John A. Burns School of Medicine (JABSOM) on the United States Medical Licensing Exam (USMLE) has been used frequently to question the quality and effectiveness of the curriculum. This article provides background on the exam itself, clarifies its purpose, and reports accurate aggregate results and trends for JABSOM medical students.

The United States Medical Licensing Exam, a joint program of the National Board of Medical Examiners (NBME) and the Federation of State Medical Boards, provides a common evaluation system for measuring knowledge and cognitive competence of all applicants for medical licensure in the United States. In a transition period which began in 1991 and completed in 1994, the USMLE has replaced the Federation Licensing Examination (FLEX) and the NBME Parts I, II and III, and currently is the only path to licensure in the United States.

Beginning with the NBME Parts I and II and continuing on with the USMLE, despite consistent disclaimers from the National Board that, "It is important to understand that the examinations have not been developed for the purpose of assessing preparation for postgraduate education"<sup>1</sup>, nor for program evaluation, unless the specific objective of the curriculum is to "teach to the test," scores continue to be used for both purposes. In a comprehensive article published in *Academic Medicine*, Nungenster, et al<sup>2</sup>, emphasize that the general purpose of an examination should be the primary factor in determining how the scores are defined and reported. Since the USMLE is primarily a certifying exam used as part of a licensing process, its main objective is to differentiate between examinees who possess necessary knowledge and skills and those who do not, which is more consistent with a pass/fail classification. The Josiah Macy, Jr. Foundation, concerned with the increased use of scores to evaluate student achievement and to judge the quality of medical school curricula, in their GPEP Report<sup>3</sup>, also called for pass/fail reporting and the elimination of total and subject-specific scores. The report goes on to point out that, "the present, passive system of medical education is based largely on memorization and recall. In over 70% of US medical schools, students are required to take the nationally standardized, multiple-choice examinations...To a limited degree, multiple-choice tests can be used to assess problem-solving abilities, but they largely measure a student's store of memorized information. They do not assess learning skills that medical students should acquire in order to keep pace with medical progress."

It is specifically this last skill which is the primary emphasis of JABSOM's Problem-Based Learning curriculum, and therefore, in the minds of some of the faculty, a more accurate interpretation of students' scores is that it is more a reflection of their success in acquiring these skills than what they know. In other words, they have learned how to learn.

With this background, JABSOM student performance on the more recent USMLE Step 1 administration (June 1995) closely matches the national norm, including the mean total score (205/207) and passing percentile (92%/93%). In spite of the lack of discipline-specific courses, none of the mean test scores in the individual subject areas (Behavioral Sciences, Biochemistry, Gross Anatomy & Embryology, Histology & Cell Biology, Microbiology & Immunology, Pathology, Pharmacology, Physiology) were significantly below the national mean. A comparison of the performance of pre-PBL and post-PBL classes is complicated by the fact that the transition from the NBME exams to USMLE exactly coincides with JABSOM's change in curriculum, and included a change in score scales and discipline categories. However, a rough comparison of passing percentiles revealed that the three pre-PBL classes (83%, 93%, 92%) and most recent three post-PBL classes (86%, 91%, 92%) were fairly comparable.

What has been even more gratifying is that performance of JABSOM students on the USMLE Step II has shown a consistent incline, with the passing percentile (96%/92%) and total mean score (207/202) slightly exceeding the national norms on the most recent administration (August 1995). In addition, scores in the individual discipline areas (Health & Health Maintenance, Understanding Mechanisms of Disease, Diagnosis, Principles of Management, Medicine, Obstetrics & Gynecology, Pediatrics, Preventive Medicine & Public Health, Psychiatry and Surgery) were all consistently above the national mean. The transition from the NBME Part 2 to the USMLE Step 2 took place in 1991 and did provide an opportunity for comparing the performance of one pre-PBL class with post-PBL classes using the same exam format. The analysis revealed that the total mean scores were identical, with a dip in the passing percentile (94% to 87%) between the last pre-PBL class and the first PBL cohort. However, a similar decline was seen nationally, and the overall passing percentile has since been dropped (through the normalization process) from 95% to 92%.

In summary, while the USMLE is designed primarily as a certifying exam, it has been used to evaluate individual students as well as curricula in medical schools. More specifically, critics of JABSOM's Problem-Based curriculum have cited poor student performance as evidence for the ineffectiveness of the program. Although the caveat mentioned above and limitations inherent therein are recognized, recent results indicate that JABSOM students are performing at or above the national norms on the USMLE.

#### References

1. Volle, R.L. Using National Board of Medical Examiner Scores in Selection of Residents. *JAMA*, 259 1988; 266.
2. Nungenster, Ronald J., PhD, et. al. Score Reporting on NBME Examinations. *Academic Medicine*, 65 1990; 723.
3. Physicians for the Twenty-First Century; the GPEP Report. *Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine*; AAMC, 1984.